ENPWI-NX2

IEEE 802.11n Draft 2.0 Wireless

LAN PCMCIA Adapter

User's Guide

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that

to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

SAR compliance has been established in typical laptop computer(s) with CardBus slot, and product could be used in typical laptop computer with CardBus slot. Other application like handheld PC or similar device has not been verified and may not compliance with related RF exposure rule and such use shall be prohibited.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN 60 950-1: 2001 +A11: 2004

Safety of Information Technology Equipment

EN 50392: (2004-01)

Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz)

EN 300 328 V1.7.1: (2006-10)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

EN 301 489-1 V1.6.1: (2005-09)

Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-17 V1.2.1 (2002-08)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

CE0560

cs Česky [Czech]	*Encore Electronics Inc* tímto prohlašuje, že tento ENPWI-NX2 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede *Encore Electronics Inc* erklærer herved, at følgende udstyr ENUWI-NX2 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt *[Name des Herstellers]*, dass sich das Gerät ENPWI-NX2 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab *Encore Electronics Inc* seadme EPWI-NX2 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, *Encore Electronics Inc.*, declares that this ENPWI-NX2 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente *Encore Electronics Inc* declara que el ENPWI-NX2 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *Encore Electronics Inc* ΔΗΛΩΝΕΙ ΟΤΙ ENPWI-NX2 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente *Encore Electronics Inc* déclare que l'appareil ENPWI-NX2 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente *Encore Electronics Inc* dichiara che questo ENPWI-NX2 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *Encore Electronics Inc* deklarē, ka ENPWI-NX2 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *Encore Electronics Inc* deklaruoja, kad šis ENPWI-NX2 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

nl Nederlands [Dutch]	Hierbij verklaart *Encore Electronics Inc* dat het toestel ENPWI-NX2 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *Encore Electronics Inc*, jiddikjara li dan ENPWI-NX2 jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *Encore Electronics Inc* nyilatkozom, hogy a ENPWI-NX2 megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *Encore Electronics Inc* oświadcza, że ENPWI-NX2 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*Encore Electronics Inc* declara que este ENPWI-NX2 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*Encore Electronics Inc* izjavlja, da je ta ENPWI-NX2 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*Encore Electronics Inc* týmto vyhlasuje, že ENPWI-NX2 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	*Encore Electronics Inc* vakuuttaa täten että ENPWI-NX2 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar *Encore Electronics Inc* att denna ENPWI-NX2 står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

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INTRODUCTION

Congratulations on your purchase of Encore's ENPWI-NX2 Wireless 802.11n CardBus Adapter.

This manual contains detailed instructions regarding the operation of this product. Please keep this manual for future reference.

With the ENPWI-NX2 Wireless 802.11n CardBus Adapter, a desktop or laptop computer can communicate with another computer wirelessly. An easy-to-use utility is bundled with the ENPWI-NX2 Wireless 802.11n CardBus Adapter for configuration, monitoring, and diagnostic purposes.

The ENPWI-NX2 Wireless 802.11n CardBus Adapter can provides wireless speed wireless speed up 300Mbps RX PHY Rate,150Mbps TX PHY Rate.

The ENPWI-NX2 Wireless 802.11n CardBus Adapter provides users with access to real-time information anywhere in their organization. The mobility of the ENPWI-NX2 Wireless 802.11n CardBus Adapter provides productivity and service, which are not available under wired networks. The ENPWI-NX2 Wireless 802.11n CardBus Adapter can easily adapt from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

Overview of this User's Guide

Introduction. Describes the ENPWI-NX2 Wireless 802.11n CardBus Adapter and its features.

Unpacking and Setup. Helps you get started with the basic installation of the ENPWI-NX2 Wireless 802.11n CardBus Adapter.

Hardware Installation. Describes the LED indicator on the Adapter.

Software Installation. Describes how to setup the driver and the utility setting.

Technical Specifications. Lists the technical (general, physical and environmental) specifications of the ENPWI-NX2 Wireless 802.11n CardBus Adapter

UNPACKING AND SETUP

This section provides unpacking and setup information for the ENPWI-NX2 Wireless 802.11n CardBus Adapter Unpacking

The box should contain the following items:

- One ENPWI-NX2 Wireless 802.11n CardBus Adapter
- One Driver & Utility CD-ROM

If any item is found missing or damaged, please contact your local reseller for replacement.

Setup

Before installation, check the following:

- Make sure your computer is running at least a 300MHz or above processor with 256MB RAM or above
- Visually inspect the CardBus Adapter and make sure that it is fully plugged in to the PCMCIAI slot.
- The operating system on your computer must be the following: Windows 2000 (Service Pack 4), XP (Service Pack 2), Windows Vista
- A draft 802.11n or 802.11b/g access point.
- Make sure the environment has minimal interference and obstructions.

IDENTIFYING EXTERNAL COMPONENTS

LED

Link

◆ The Link LED indicator lighted green when the ENPWI-NX2 Wireless 802.11n CardBus Adapter is connected to wireless network successfully.

ACT (Activity)

◆ The ACT LED indicator blinking green when the ENPWI-NX2 Wireless 802.11n CardBus Adapter is transmitting or receiving data.

Check the installation

The LEDs of the ENPWI-NX2 Wireless 802.11n CardBus Adapter are clearly visible and the status of the network link can be seen instantly:

1. Once the device is plugged to the station's PCMCIA slot, the LED of the ENPWI-NX2 Wireless 802.11n CardBus Adapter will light up indicating a normal status.
2. When the device plugged to the station's PCMCIA slot and the driver was installed, the ACT will start alternate blinking, it means that the device is starting to scan the wireless devices near the ENPWI-NX2 Wireless 802.11n CardBus Adapter.
3. While the ENPWI-NX2 Wireless 802.11n CardBus Adapter linked up and transmitting data to the Access Point or to other Wireless LAN station, the Link LED will lighted green.

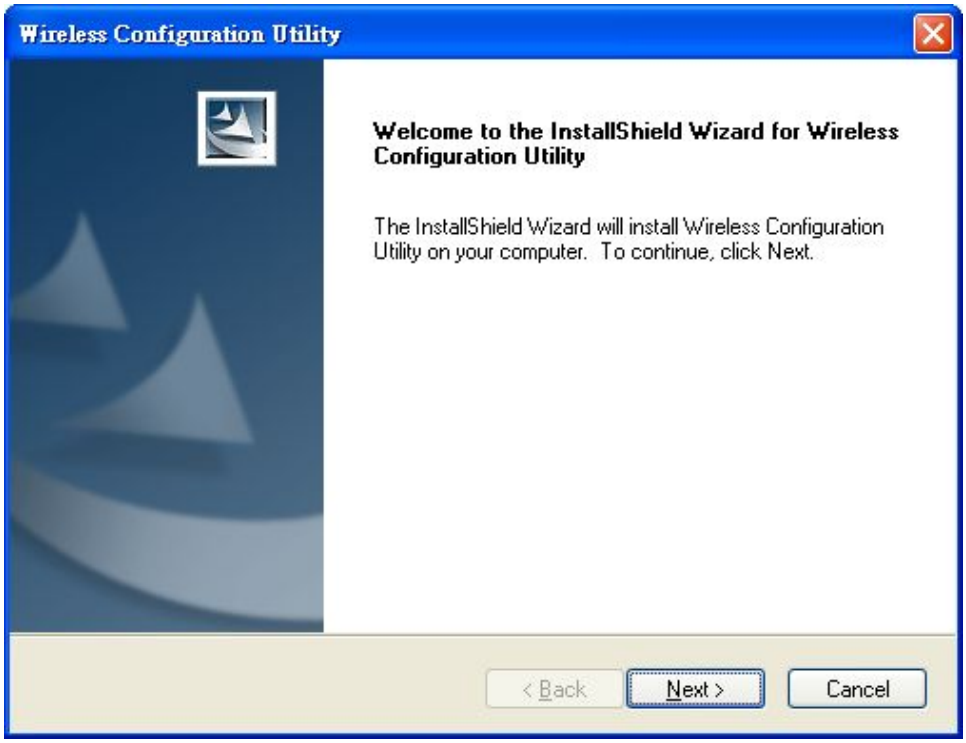
SOFTWARE INSTALLATION

This section describes how to install the driver and utility for the 802.11n Wireless LAN CardBus Adapter.

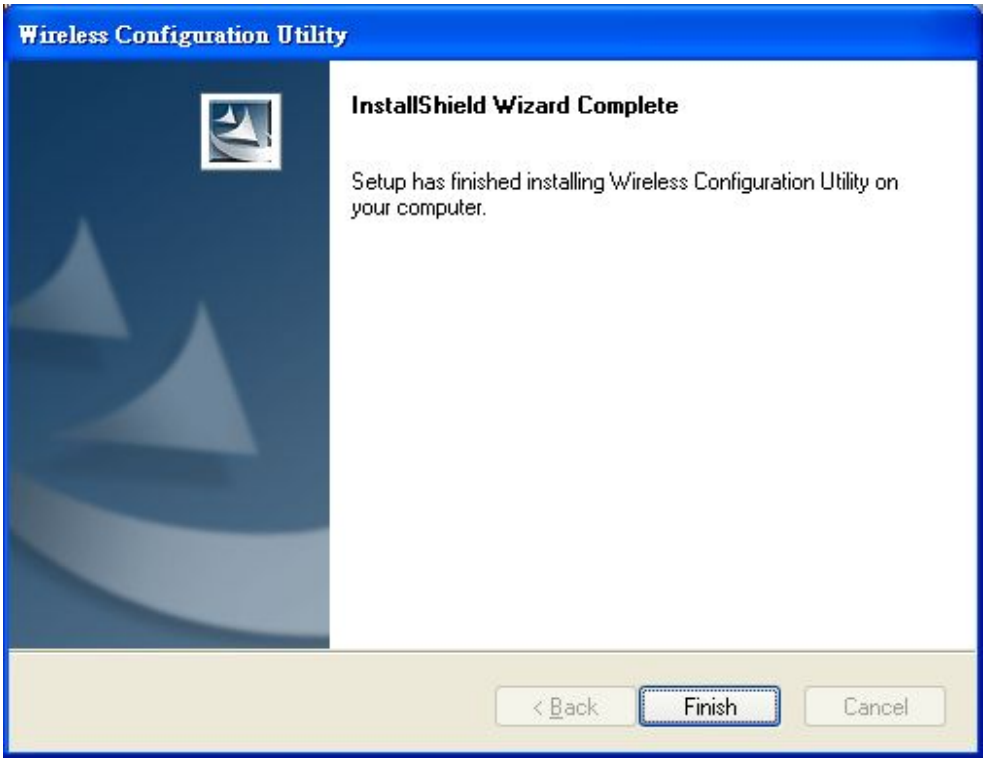
Windows Based Utility Installation

1) Insert the Utility and Driver CD-ROM into your computer's CD-ROM Drive and then click **Setup Wizard**.

2) Follow the Install Shield Wizard Instructions


Wireless Configuration Utility
Welcome to the InstallShield Wizard for Wireless Configuration Utility
The InstallShield Wizard will install Wireless Configuration Utility on your computer. To continue, click Next.
< Back
Next >
Cancel

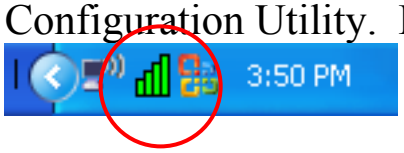
3) Click **Finish** to restart the computer.



4) Plug the ENPWI-NX2 Wireless 802.11n CardBus Adapter into an available PCMCIA slot on your laptop PC.

WIRELESS UTILITY SETTING

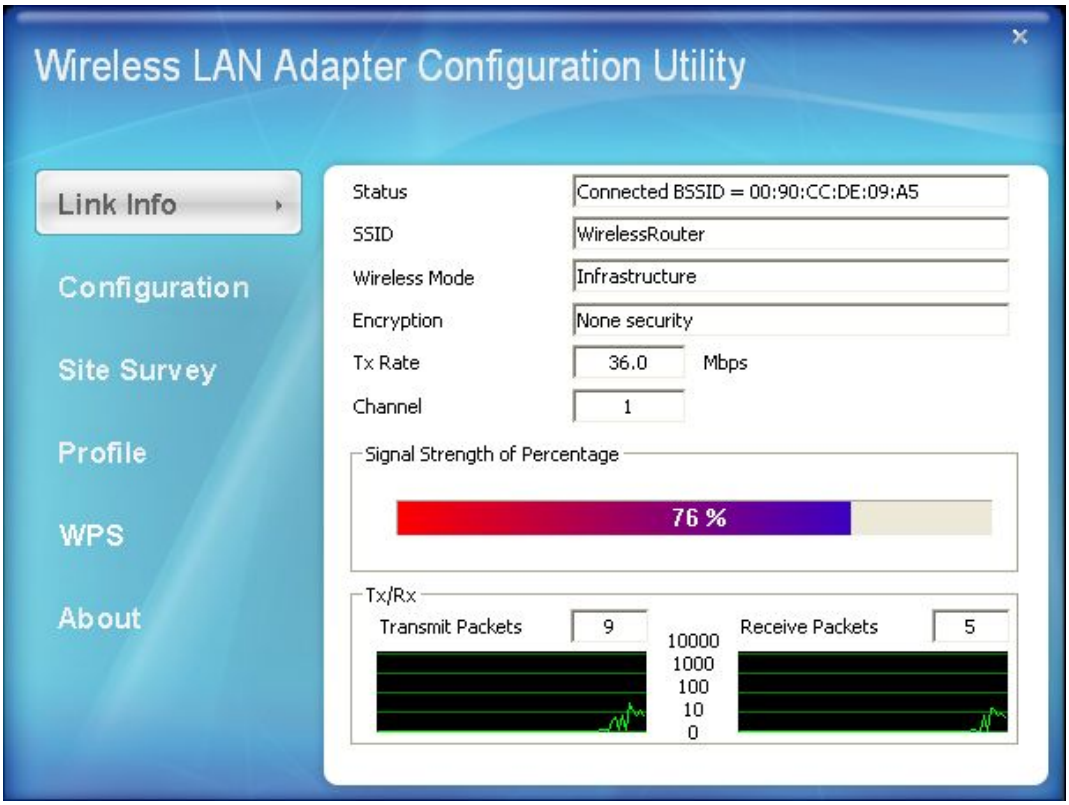
The user can configure the wireless settings using the Wireless Adapter Configuration Utility. Double-click the utility icon that appears in the taskbar.



The Wireless Adapter Configuration Utility is divided into six sections: Link Info, Configuration, Site Survey, Profile, WPS and About.

Link Information

This is the default screen after launching the Utility program.



Status: Shows the associated BSSID, which can be used to identify the wireless access point.

SSID: Shows the current SSID, which must be the same on the wireless client and AP in order for communication to be established.

Frequency: Shows the current frequency used for the wireless network.

Wireless Mode: Shows the current wireless mode used for wireless communication.

Encryption: Shows the current encryption mode used on the wireless network.

TxRate: Shows the current data rate used for transmitting.

Channel: Shows the current channel for communication.

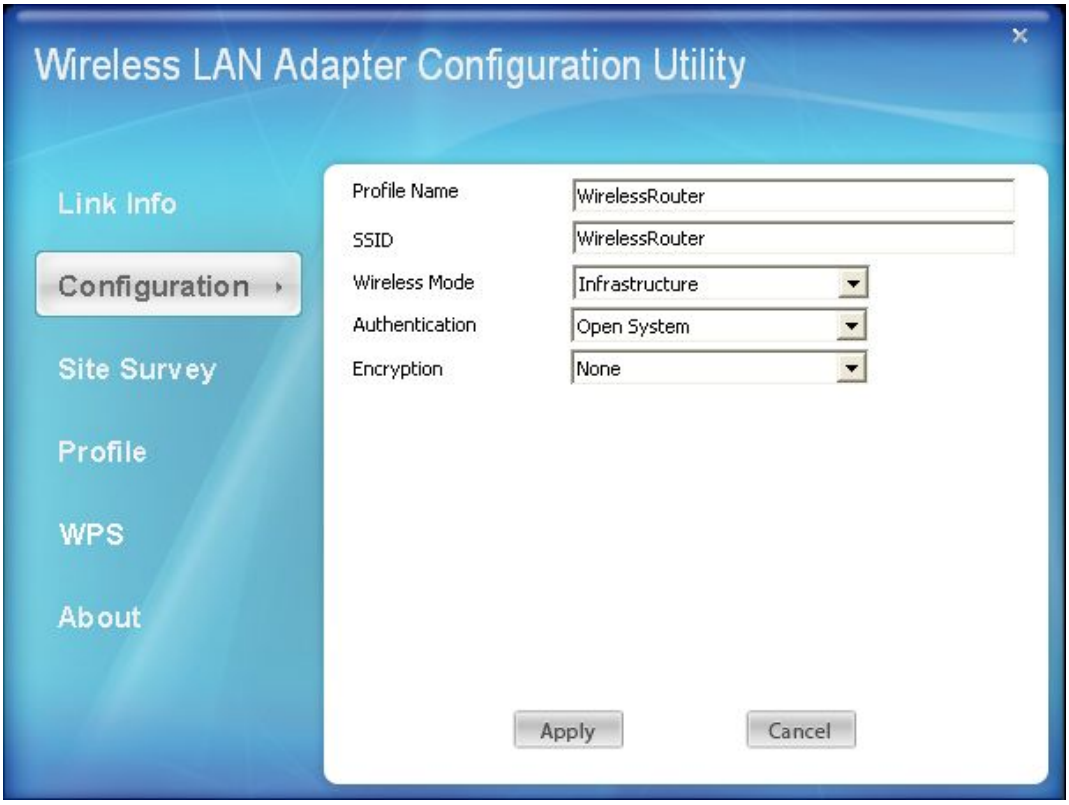
Link Quality: Shows the link quality of the ENPWI-NX2 Wireless 802.11n CardBus Adapter with the Access Point when operating under Infrastructure mode.

Signal Strength: Shows the wireless signal strength of the connection between the Wireless N CardBus Adapter with the Access Point.

Data Rate: Shows the statistics of data transfer, and the calculation is based on the number of packets transmitted and received.

Configuration

This screen is where you set the basic wireless settings for the ENPWI-NX2 Wireless 802.11n CardBus Adapter.



Profile Name: Shows the Profile Name.

SSID: Service Set Identifier, which is a unique name shared among all clients in a wireless network. The SSID must be identical for each client in the wireless network.

Wireless Mode: There are two wireless modes available for selection

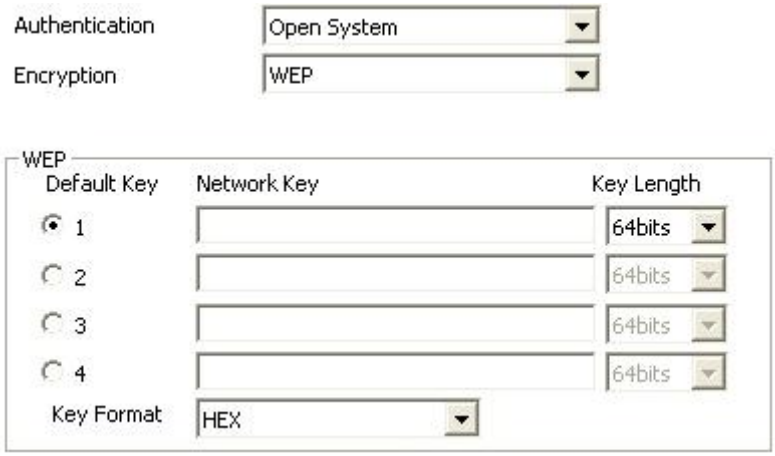
- Infrastructure – to establish wireless communication with the LAN and other wireless clients through the use of Access Points.
- Ad-Hoc – to establish point-to-point wireless communication directly with other wireless client devices.

Authentication: The following options are available: Open System, Shared Key, WPA-PSK, WPA2-PSK, WPA EAP-TLS, WPA2 EPA-TLS . Select Open System, Shared Key for WEP data encryption feature.

Open or Shared Key

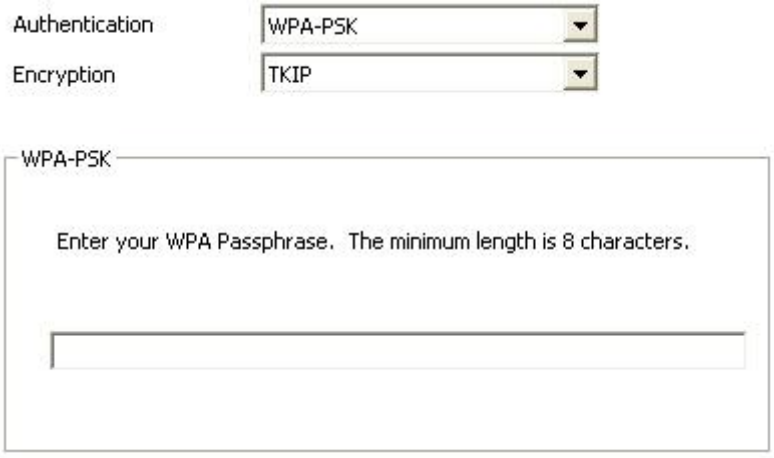
Open System and **Shared Key** require the user to set a WEP key to exchange data with other wireless clients that have the same WEP key.

- Default Key: select one of the 4 keys to use.
- Network Key: choose the encryption way, either in HEX or ASCII formats, and enter the password in the blank space.
- Key Length: select 64 or 128 bits as the length of the keys
  Key Format: HEX or ASCII



WPA-PSK / WPA2-PSK

If using the **WPA-PSK/WPA2-PSK** authentication method, please select the ***Encryption*** type for TKIP or AES then enter the Passphrase key. The minimum length is 8 characters.

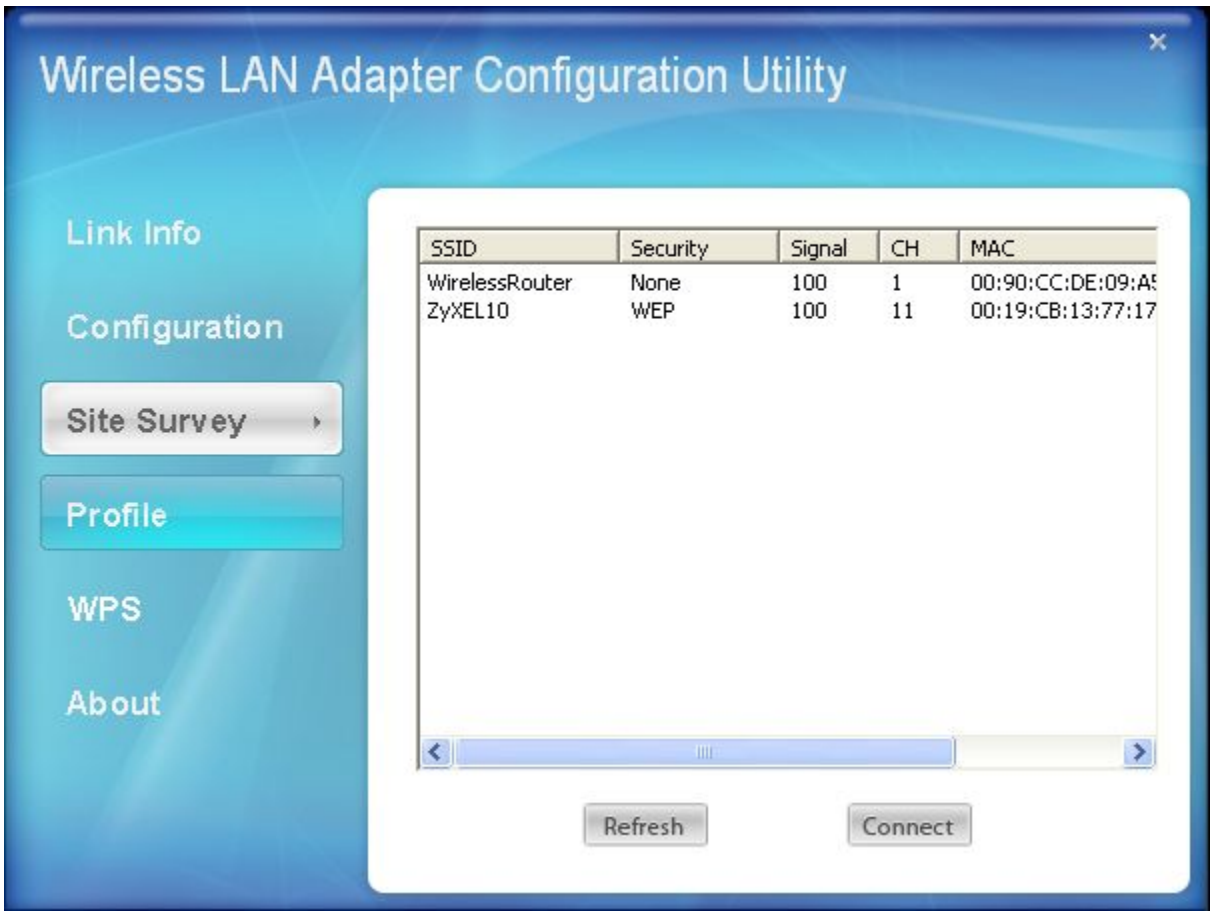


WPA EAP-TLS

If using the **WPA/WPA2 EAP-TLS** authentication method, please select the ***Encryption*** type for TKIP or AES then select the ***WPA/WPA2 Certificate*** from drop down list.

Site Survey

This screen allows the user to scan for available wireless networks (wireless clients and Access Points). It also allows the user to establish wireless communications with an available wireless network.



Available Network – displays the wireless networks (wireless clients and access points) that are within range.

Select any one of the wireless networks by **double-clicking** on it or clicking on the "**Connect**" button.

Click the "**Refresh**" button to scan for available networks.

Profile

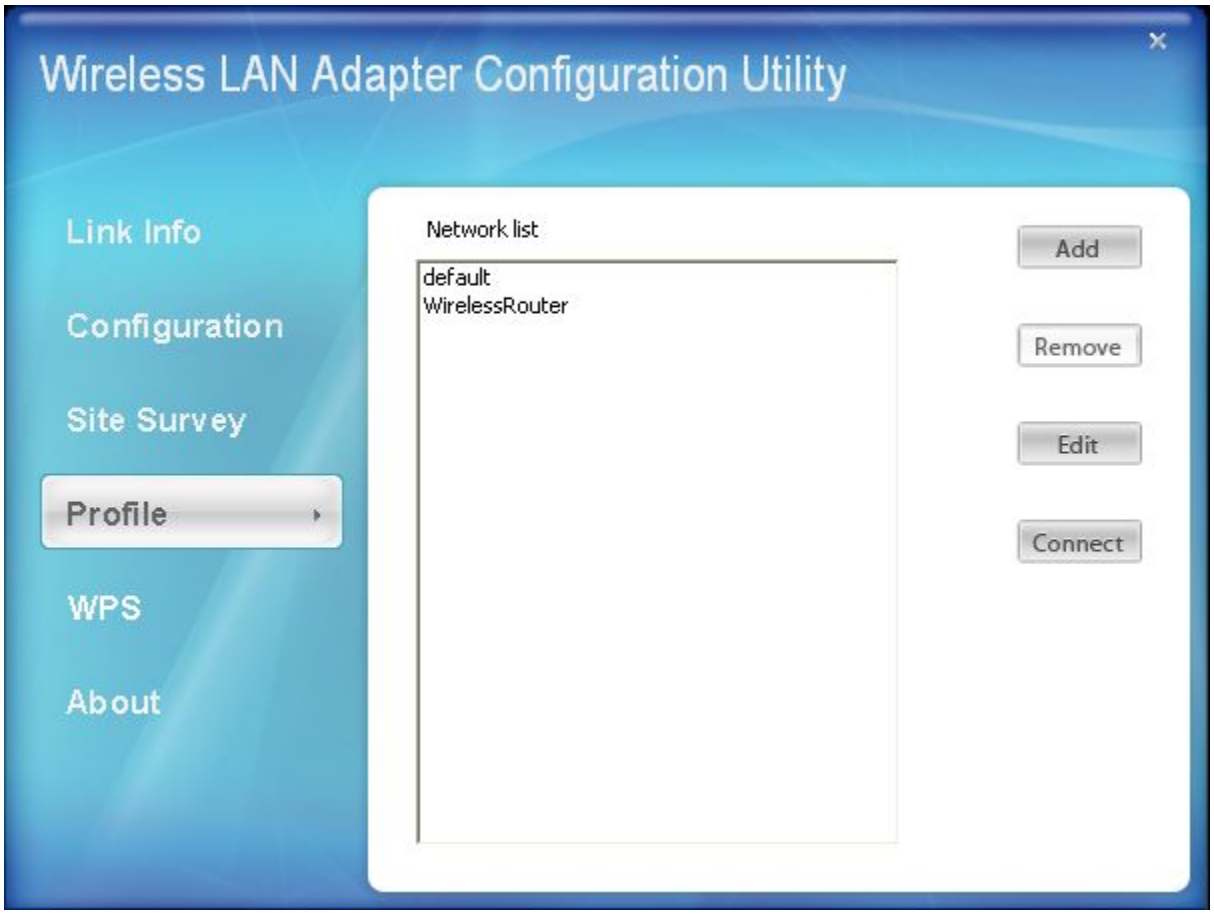
Profile – The user can create and manage the created profiles for home, work or public areas. By double-clicking on one of the created profile, the setting will adjust to the specific setting such as SSID, channel, and encryption as saved by that particular profile.

Add: Adds a profile. The following screen will appear. The user can enter the necessary information required for accessing Access Points or Wireless Router

Remove: Deletes the selected profile

Edit: Edit an exist profile. The screen will back to profile. Edit the SSID and select the Wireless Mode, Authentication and Encryption then click ***Apply*** to save the profile. When the Profile name was changed, a new profile will be added in the list.

Connect: Selected a profile from list then click the ***Connect*** to connecting to the wireless network with the profile setting.



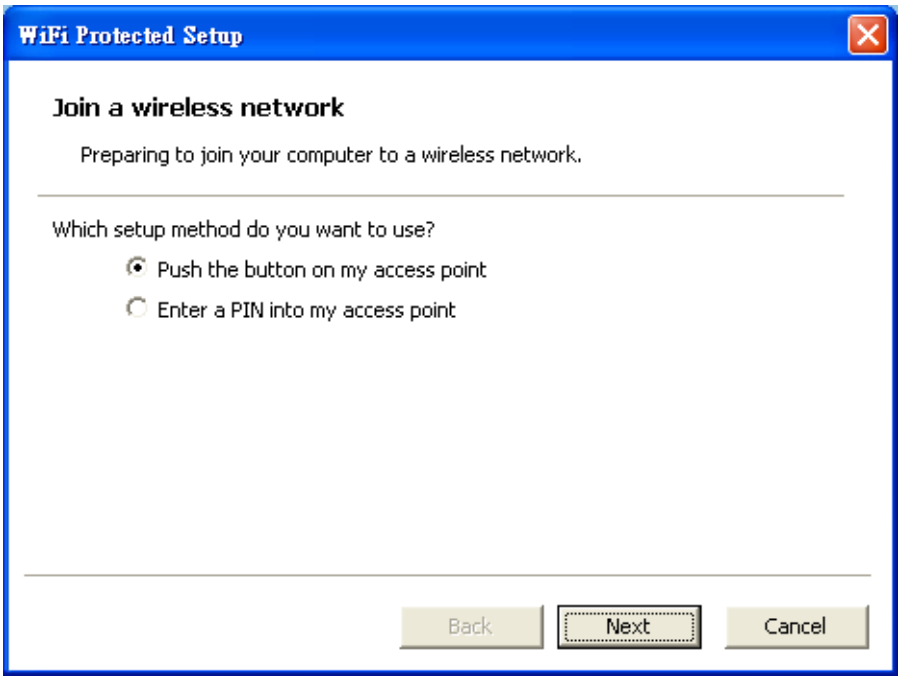
WPS

WiFi Protected Setup (WPS) is an optional certification program from the Wi-Fi Alliance that is designed to ease the task of setting up and configuring security on a wireless network. There are two methods used in the WPS as below instruction.

Push the button on my access point

Using the WPS configuration with the "Push the button on my access point" method, the configuration steps as below:

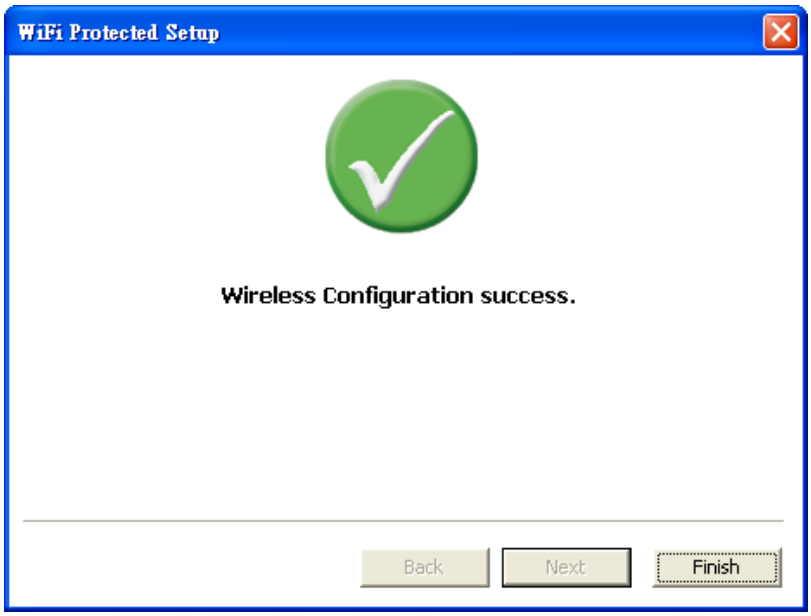
1) Selected the "Push the button on my access point".


WiFi Protected Setup
Join a wireless network
Preparing to join your computer to a wireless network.
Which setup method do you want to use?
Push the button on my access point
Enter a PIN into my access point
Back
Next
Cancel

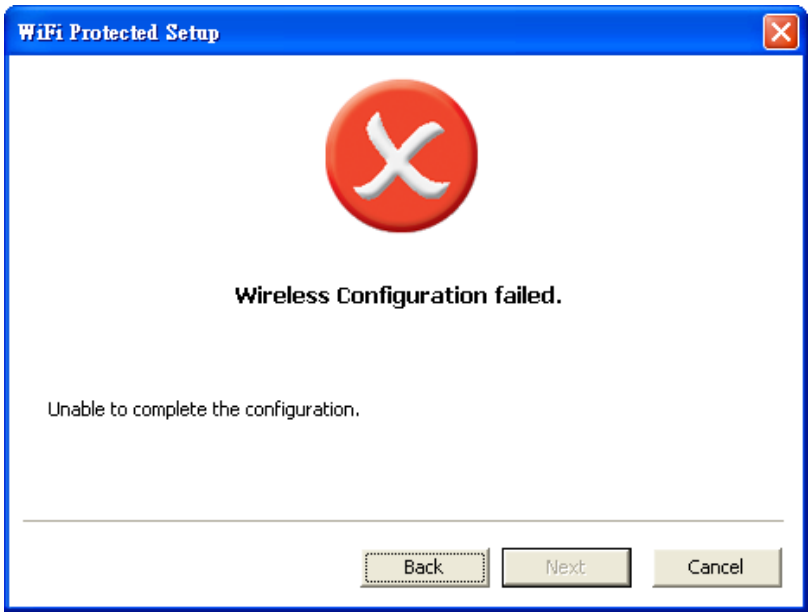
2) Push the WPS configuration button on your wireless access point or router.

3) Cliek the ***Nex***t button start the WPS configuration.

4) If the WPS configuration was successful, the follow window will show on.



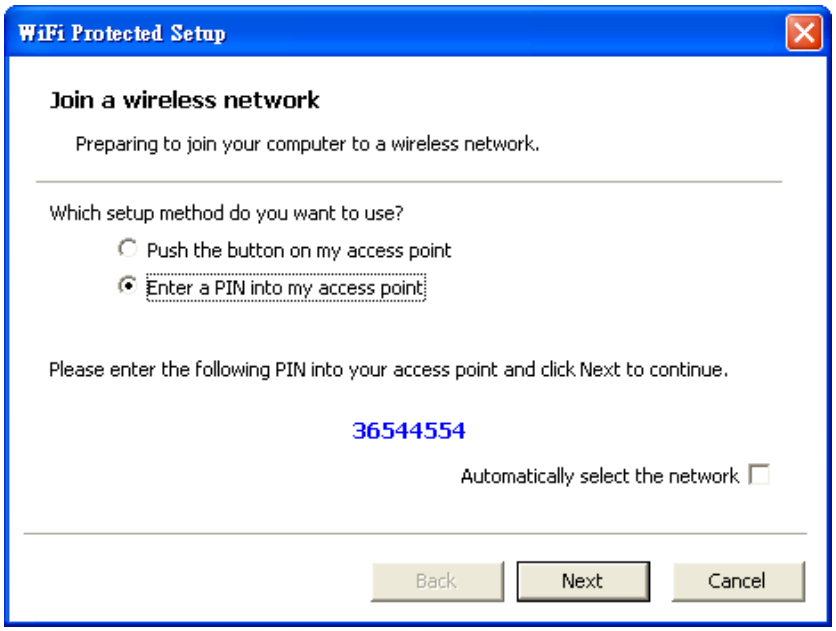
5) If the WPS configuration was failed, the follow window will show on.



Enter a PIN into my access point

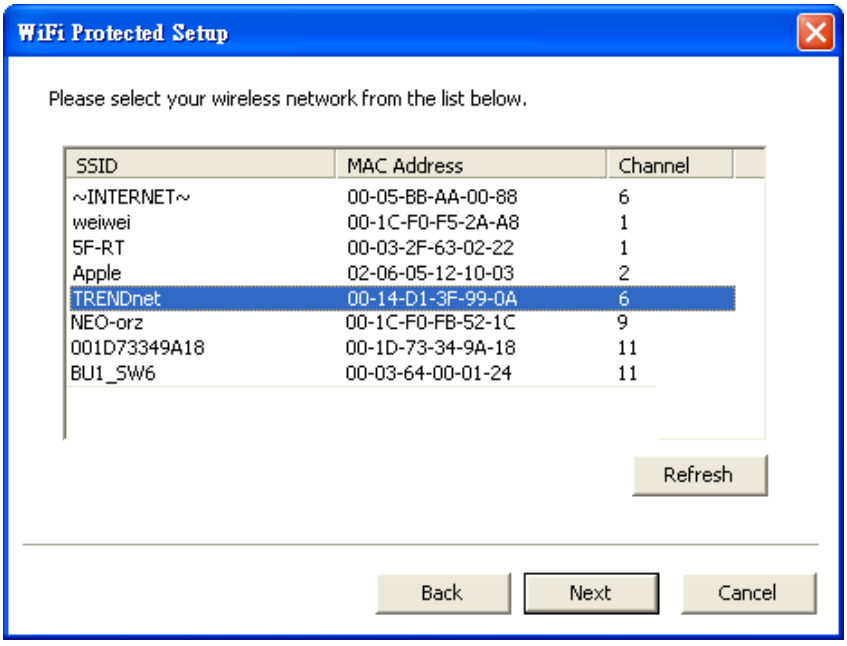
Using the WPS configuration with the "Enter a PIN into my access point" method, the configuration steps as below:

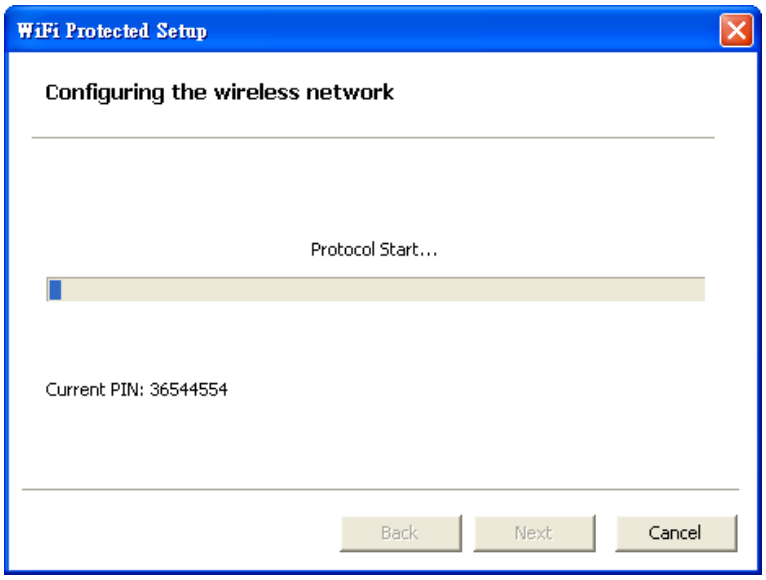
1) Selected the "Enter a PIN into my access point", the PIN will be show on the button of the windows.


WiFi Protected Setup
Join a wireless network
Preparing to join your computer to a wireless network.
Which setup method do you want to use?
Push the button on my access point
Enter a PIN into my access point
Please enter the following PIN into your access point and click Next to continue.
36544554
Automatically select the network
Back
Next
Cancel

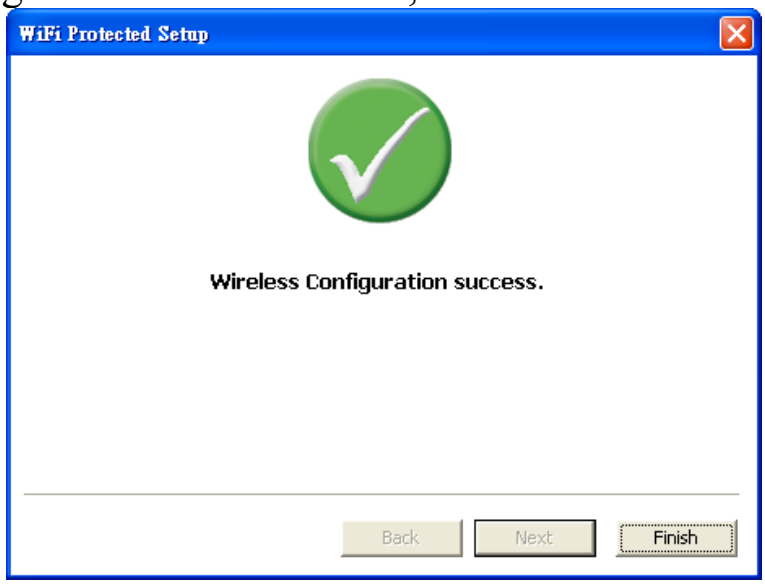
2) Enter the PIN code into the WPS "Clint PIN number" of you wireless access point or router then click the ***Start PIN*** button, the wireless access point or router will start the WPS configuration process.

3) Selected a wireless access point or router which one will be connecting then click the ***Next*** button start the WPS configuration. If the "Automatically select the network" was checked, the setup step will be skip.

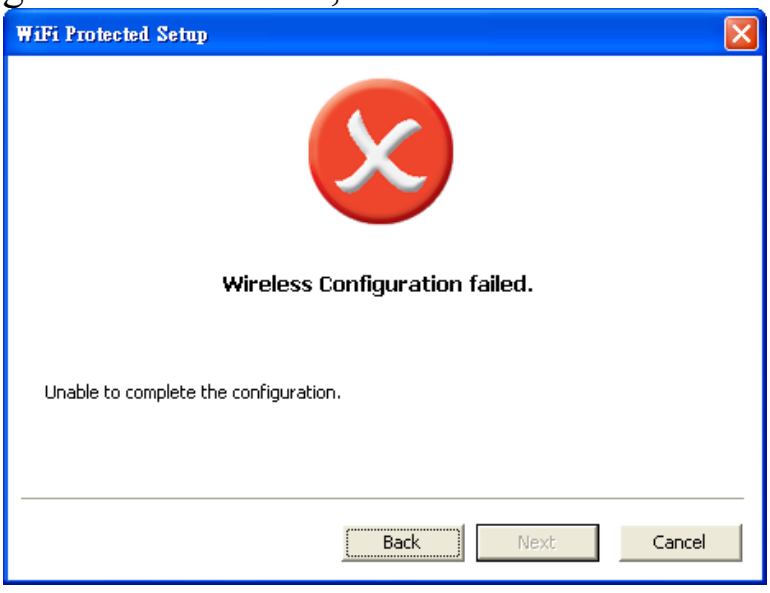




4) If the WPS configuration was successful, the follow window will show on.

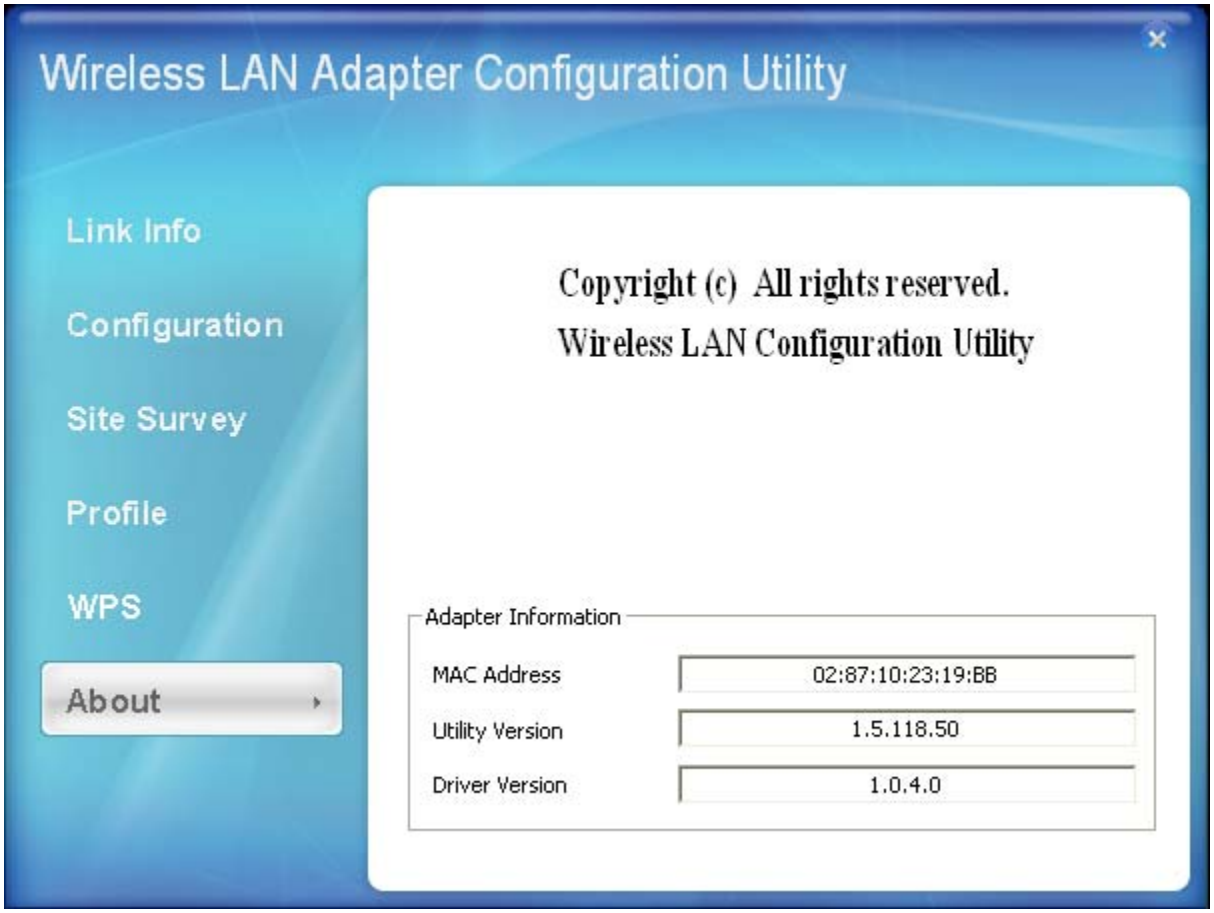


5) If the WPS configuration was failed, the follow window will show on.



About

This screen displays information about the ENPWI-NX2 Wireless 802.11n CardBus Adapter, such as the Driver and Utility version. When a new version of the utility becomes available for upgrade, users will be able to identify by version numbers.



TECHNICAL SPECIFICATIONS

Hardware	
Interface	32-bit CardBus Type II specification
Standards	IEEE 802.11n draft v2.0, IEEE 802.11b and IEEE 802.11g
Antenna	Two internal high performance antennas
LED Indicator	Link/ Activity
Supported OS	Windows® XP, Vista™
Dimensions (LxWxH)	124x54x8.7mm
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F) Storage: -10° ~ 70° C (14° ~ 158° F)
Humidity	10% ~ 95% max (Non-condensing)
Certification	FCC Part 15.247 for US, ETS 300, 328 for Europe
Wireless	
Module Technique	DBPSK/DQPSK/CCK/OFDM (BPSK/QPSK/16-QAM/64-QAM)
Frequency	2.412 to 2.484 GHz (Industrial Scientific Medical Band)
Media Access Protocol	CSMA/CA with ACK
Data Rate (auto fallback)	1, 2, 5.5, 6, 11, 12, 18, 22, 24, 30, 36, 48, 54, 60, 90, 120, 180, 240, 270, 300Mbps (auto sense) for Rx 1, 2, 5.5, 6, 11, 12, 18, 22, 24, 30, 36, 48, 54, 60, 90, 120, 135,150Mbps (auto sense) for Tx
Output Power	15dBm (typically) @ 802.11b 14dBm (typically) @ 802.11g 14dBm (typically) @ 802.11n
Receiving Sensitivity	135Mbps: Typical - 65dBm @ 10% PER 54Mbps: Typical - 68dBm @ 10% PER 11Mbps: Typical - 84dBm @ 8% PER
Security	64/128-bits WEP Encryption, WPA-PSK, WPA2-PSK, WPA, WPA2
Channels	1~11 channels (FCC/NCC), 1~13 channels (ETSI)